




Wisconsin Entomological Society Newsletter


Volume 34, Number 2

JUNE 2007

The recent widespread losses of Honey Bee colonies from Colony Collapse Disorder (CCD) has received a lot of media coverage. At this time the cause of CCD remains a mystery. It may be one or more factors such as parasitic mites, disease, pesticides or diet. No matter what the cause of these declines, many scientists feel



Pollinators in Peril



**Widespread Declines in
Honey Bee Colonies From
Colony Collapse Disorder**
by The Xerces Society

the sustainability of agriculture, farmers in the United States need to diversify their pollinator portfolio" said Scott Hoffman Black, executive director of the Xerces Society for Invertebrate Conservation. "The 2007 Farm Bill could provide incentives to encourage farmers to improve habitat for these important pollinators."

In This Issue...

Pollinators in Peril!
Page 1

Insect Books & Websites
June 2007 Mystery Insect
Page 2

Summer 2007 Field Trips
Page 3

**Asian Lady Beetles
in Your Wine?**
Page 4

Spring Meeting Report
Page 5

Monarch Ups and Downs
Page 6

17-Year Cicadas Are Coming!
Close-Focusing Binoculars
Page 7

The Songs of Insects
Emerald Ash Borer
Page 8

**Answer to February 2007
Mystery Insect**
Page 9

Toxic Butterflies
Page 10

that native pollinators can be an insurance policy for honey bee scarcity.

The European Honey Bee is the most important single crop pollinator in the United States. However with the decline in the number of managed Honey Bee colonies from diseases, parasitic mites, and Africanized bees, as well as from Colony Collapse Disorder, it is important to increase the use of native pollinators in our agricultural system.

"We've put all of our pollination eggs in the Honey Bee basket," says Mace Vaughan, conservation director of the Xerces Society for Invertebrate Conservation. "We need more baskets." Hundreds of species of native bees are available for crop pollination. Research from across the country demonstrates that a wide range of native bees help with crop pollination—in some cases providing all of the pollination required. These free, unmanaged bees provide a valuable service, estimated recently by scientists from the Xerces Society and Cornell University to be worth \$3 billion annually in the U.S.

"To improve crop security and

Pollinators and the 2007 Farm Bill

On October 18, 2006, the National Academy of Sciences released the report *Status of Pollinators in North America* which called attention to the decline of pollinators. Prepared by the National Research Council (NRC) Committee, the report made several recommendations including urging the Federal government to fund pollinator conservation through Farm Bill programs.

The 2002 Farm Bill includes several financial aid programs to help fund conservation on agricultural lands. Language on native pollinator conservation in the 2007 Farm Bill (due to be voted on this summer) would create incentives for farmers to protect, restore and enhance pollinator habitat in and around farms.

Fully integrating native pollinators into Farm Bill programs can have a wide impact. For example, the Environmental Quality Incentives Program (EQIP) allocated over \$1 billion in financial and technical assistance to farmers in 2006, and the Conservation Reserve Program (CRP) retired over 36 million acres of farmland, 4.5 million of which

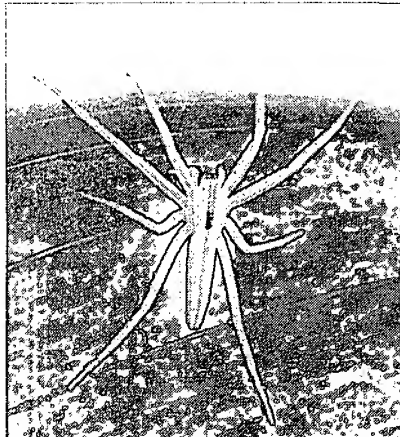
Please see **POLLINATORS**, Page 9

The Wisconsin Entomological Society Newsletter is published three times a year, at irregular intervals. It is provided to encourage and facilitate the exchange of information by the membership, and to keep the members informed of the activities of the organization. Members are strongly encouraged to contribute items for inclusion in the newsletter. Please send all news items, notes, new or interesting insect records, season summaries, and research requests to the editor:

Janice Stiefel, 2125 Grove Road, Bailey's Harbor, WI 54202, (920) 839-9796, e-mail: jstiefel@itol.com

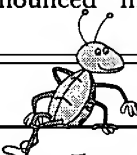
NOTE: Please report any address changes to Les Ferge, 7119 Hubbard Ave., Middleton, WI 53562. e-mail: ferge@chorus.net

MYSTERY INSECT



CAN YOU IDENTIFY IT?

Spider with abdomen three times as long as it is wide. Brown median stripe on yellowish background. Send answer to the editor. Winners will be announced in the next newsletter.



Membership Dues

Individual Membership
\$5.00 per year

Family Membership
\$10.00 per year

Sustaining Membership
\$15.00 per year

Patron Membership
\$25.00 per year

Please make check payable to
WES and send to Les Ferge,
7119 Hubbard Ave.,
Middleton, WI 53562-3231

CORRECTION!

The **VOLUME NUMBER** on the February 2007 issue of the WES Newsletter should have been Number **34**, not 33. The editor takes full responsibility and apologizes for any confusion.

Knowledge is free, but you have to bring your own container.

—Unknown



INSECT BOOKS AND WEBSITES

by Andrew Khitsun

I would like to describe several books from the series edited by Jeffrey Glassberg. The series started from two books by J. Glassberg : *Butterflies Through Binoculars: Boston-New York-Washington region* and *Butterflies Through Binoculars: Florida*. It continued with the other couple by the same author: *Butterflies Through Binoculars: East* and *Butterflies Through Binoculars: West*. It was followed by *Dragonflies Through Binoculars* by S. Funkle and already mentioned previously *Caterpillars in the Field and Garden* by T. Allen and others. The last book so far published in this series – *Wildflowers in the Field and Forest* by S. Clemants and others – was not about insects, but hopefully we'll see other insect groups covered by these outstanding publications.

Now to more serious (and expensive) stuff. *Ants* by B. Holldobler & E. Wilson is a winner of Pulitzer Prize and must-have for any serious myrmecologist. Two books by W. Lorenz were released last year – *Systematic List of the Extant Ground Beetles of the World & Nomina Carabidarum: A Directory of Scientific Names of Ground Beetles*. Other serious works on Carabidae include *A Natural History of the Ground Beetles of America North of Mexico* by A. Laroche & M.-C. Laroche and *Molecular Phylogeny and Evolution of Carabid Ground Beetles* by S. Osawa and others. I haven't been able to look into either of Ground Beetles books since they're professional volumes and not available in regular bookstores. On the other hand, *Evolution of the Insects* by D. Grimaldi & M. Engel is accessible and more affordable to a general reader.

Among the web sites, the USGS just added a couple of new taxa to their list of covered invertebrates of the United States – Mayflies and Stoneflies at:

<http://www.npwrc.usgs.gov/resource/distr/insects/mfly/index.htm> and <http://www.npwrc.usgs.gov/resource/distr/insects/sfly/index.htm> respectively. It's still work in progress and I suggest you revisit the site for new info, photos etc. Another website, Discover Life, at <http://pick4.pick.uga.edu/mp/20q/> has an ever expanding collection of online guides to identify invertebrates.

If you didn't visit WES member Mike Reese's website recently, I suggest doing so at <http://wisconsinbutterflies.org/>. In addition to butterflies, Mike has pages devoted to dragonflies, damselflies and tiger beetles of Wisconsin and links to a variety of Wisconsin natural resources and websites.

Also, check out WES member, Janice Stiefel's amazing moth, butterfly and larval photos on BugGuide at <http://bugguide.net/bgimage/user/1011>. There are 46 pages with approximately 12 photos on each page. One left click on each photo will bring up a larger version of the photo, plus data to go along with the image. Janice also contributes to Moth Photographers Group mentioned in previous issues.

Editor's Note: Andrew Khitsun has his own site at www.lepidopteraresources.com, listing hundreds of books and stamps devoted to Lepidoptera, in addition to an extensive link library. If you're a WES member and have your own site or contribute or post your art to any of the photo sites on the web, please let us know and we'll publish the links in the upcoming issues. 🍀

**Saturday, June 16:
Dragonflies of Germania
Marsh and Comstock
Bog (Marquette Co.)**

This is a joint trip of the Madison Audubon Society and Wisconsin Wetlands Association. Learn about the identification, biology, behavior, beauty, and life-style of the dragonfly and damselfly species we encounter at two different wetland sites in Marquette County. After checking out Germania Marsh we will go to Comstock Bog to look for the rare Elfín Skimmer, the smallest dragonfly in North America! Here we will be hiking in a very wet area so be prepared to get wet (up to a foot deep). Leader is Mike Reese who has an excellent website at:

www.wisconsinbutterflies.org

Bring binoculars if you have them (close-focusing ones work best) or just get close! (We have a few extra pairs of binoculars.) It's best to wear long pants and a hat for protection from the sun. Bring mosquito repellent for shady areas. The trip will last at least until noon so bring a lunch.

Meet at 9:00 A.M. in Marquette County. Directions: From Montello travel north on Hwy 22 for nearly 10 miles. Just past the Mekan River, turn right (east) onto Duck Creek Avenue. Go 1.5 miles to Duck Creek Road and follow this south less than a mile to the parking lot on the east side of the road just north of the Mekan River. To **REGISTER** for this trip, call (608) 250-9971. If you have a question about the trip call Mike at (920) 787-2341 (Wautoma) or email: mikereese@wisconsinbutterflies.org.

The following trips are joint trips of the Madison Audubon Society and the Southern Wisconsin Butterfly Association. Members of WES are welcome.

**Sunday, June 24:
17-year Cicadas and Butterflies**

This is a once-in-a-lifetime trip to see and hear one of the more amazing phenomenon of nature. Cicadas are the loudest insect singers. The species *Magicicada*



SUMMER 2007 INSECT FIELD TRIPS

by the Madison Audubon Society, et. al.

*Please join us on these trips.
(Note: These are not collecting trips.)*

septemdecim lives underground for its exceptionally long, 17-year life cycle. At the end of 17 years of synchronized development the entire adult population emerges in abundance and sings its loud chorus. We will travel for an hour or so to a known concentration point in southeastern Wisconsin to see and hear them. Participants will receive a free CD, *Songs of Wisconsin Cicadas* (10 species) by the Leglers. We will also visit Southern Kettle Moraine to observe and learn about butterflies. Leaders are Mike Reese and Karl and Dorothy Legler.

Bring binoculars, the closer they focus the better. We will have a few extra pairs of binoculars, but to use them you should call ahead. Also bring a lunch since we will not return until afternoon. Wear a hat and long pants for protection from the sun, and sturdy shoes for walking. We will meet at 8:30 A.M. To **REGISTER** for this trip call Karl Legler at (608) 643-4926 or email at karlindot@chorus.net. The trip will be postponed until Sunday, July 1 if there is rain or if cicada emergence has been delayed.

**Saturday, July 7:
Madison Butterfly Count**

Our 17th annual count! Each summer butterfly enthusiasts all over North America participate in some 467 censuses of butterfly species and publish the results. These censuses help to monitor the health of our butterfly populations. Last year, on the Madison census, 20 people in 3 groups found 371 butterflies of 33 species. If you want to see and learn about butterflies, join us on this 3 hour count/field-trip. Bring binoculars, the closer they focus the better, or just get close! We will have a few

extra binoculars. Dress for protection from the heat and sun; a hat is recommended. (NABA) The North American Butterfly Association requires a \$3 fee from each participant to cover publishing costs.

Meet at 9 A.M. at the parking lot for the Grady Tract in the UW Arboretum. We will count until about noon. Directions: Heading west on the Beltline (Hwy 12), take the Seminole Highway exit and then turn left (south) on Seminole Highway driving across the bridge over the Beltline turning immediately into the parking lot for the Grady Tract. If you have a question about the butterfly count call leaders Karl and Dorothy Legler at (608) 643-4926 (Sauk City) or email karlindot@chorus.net

**Saturday & Sunday, July 28 & 29:
Butterflies and Cicadas
Along the Mississippi**

This is a one day trip with optional second day which has 3 goals: 1) to look in the vicinity of the Mississippi River for butterflies, especially rare migrants from the South. 2) visit an excellent Butterfly Garden at an Iowa State Park, 3) along the way, listen to as many of our 6 late summer species of Cicada as we can. Leaders will be Mike Reese and Karl and Dorothy Legler. (Of course we will also encounter interesting birds, dragonflies, damselflies, etc. along the way!

This is a flexible ONE OR TWO DAY camp out trip. We will visit the SW corner of the state and Iowa on Saturday. Those who are doing the one day trip will then return to Madison. Others of the group will continue on to Nelson Dewey State Park overlooking the Mississippi for camping, cicada song at dusk, and further exploration on Sunday.

Bring close-focusing binoculars (we have some extra binoculars but call ahead). A hat and long pants for protection from the sun are recommended. Meet on Saturday at 8:00 A.M. at the Verona Park and Ride. Take Hwy 151 west from Madison and get off at Exit 81

Please see FIELD TRIPS, Page 4

FIELD TRIPS, from Page 3

at Verona. Then go south on Old PB to the Park and Ride. Call (608) 643-4926 to **REGISTER** for the trip only if you plan on the two day campout. If you have a question about the trip call Karl or Dorothy at the above number or karlndot@chorus.net.

**Saturday, August 11:
Butterflies of the
Avoca/Blue River Area**

This trip will highlight several areas in the Lower Wisconsin State Riverway, including Avoca Prairie and Savanna State Natural Area in Iowa Co. and the Muscoda and Blue River units in Grant Co. Leaders will be Todd Sima and Mike Reese. We expect to see late butterflies and several southern immigrants. The trip may last until 5 P.M. A hat and long pants are recommended. Bring binoculars (the closer they focus the better). A few extra binoculars are available but call ahead. This is a joint trip with the Southern Wisconsin Butterfly Assn. Meet at the Middleton Park and Ride to carpool and leave at 9:30 A.M. From Hwy 12 at Middleton take Exit 249 (Parmenter St.) to the Park and Ride. OR meet at 10:30 A.M. at the first stop. Take Hwy 14 east to Lone Rock, south on Hwy 130 then turn right on Hwy 133. Go west about 5.5 miles, turn right on Hay Rd, and drive north to the parking lot just before the creek. Call Mike at (920) 787-2341, if you have a question about the trip.

**Saturday, August 25:
Southern Immigrant Butterflies
at Rotary Gardens and Beyond**

We will visit Rotary Gardens, a botanical garden in Janesville, where we will see southern immigrant butterflies. Fiery Skipper, Sachem, Gray Hairstreak and Common Buckeye are all possible. Also, the Great Spreadwing, the state's largest damselfly, is found here. There is a suggested \$5 donation for entering the garden. Afterward we will head south towards Avon Bottoms and may make brief stops at the Rock River Prairie and/or Newark Prairie State Natural Areas. The field trip



ASIAN LADY BEETLES IN YOUR WINE?

by Janice Stiefel



We've all been complaining about the invasion of the Asian Lady Beetles. Here in Door County, they invade our homes all winter, dive-bombing us when we have the lights on at night, sometimes even taking a bite on our skin to see what we taste like. They stink and if we drink a glass of water or eat food where one or two have sneaked in, the taste is awful. We have vacuumed up thousands. They are definitely an annoying nuisance.

There was recently an article from *Science News* on the Internet announcing the problem this beetle is causing in the wine industry. It appears that they have a taste for snacking on damaged or ripe grapes, which means they can be harvested along with the fruit ...thereby being squashed during winemaking. When crushed or even just stressed, the insects release blood from their leg sockets. "Several volatile compounds in that blood are highly aromatic, with distinctly vegetal scents," notes Iowa State University analytical chemist, Lingshuang Cai. "The barest whiff can bring to mind a mix of green bell peppers, roasted peanuts, raw potatoes, and musty earth, she says. "It may not sound too bad, but it's actually quite noxious and can definitely spoil a batch of wine." Her team notes, "entire harvests and some vineyards have failed because of Multicolored Asian Ladybug contamination." These ladybug smells trace to

compounds known as methoxy-pyrazines.

Research has shown that among the tested bugs, orange Asian Ladybugs produced dramatically more of the smelly compounds than their yellow-coated relatives—even though both varieties belong to the same species, *Harmonia axyridis*.

Scientists at Brock University in Canada have been investigating ways to remove the taint of methoxy-pyrazines in wines. Last year, they reported some success by incubating red and white wines with oak chips. They reported in the January 2006 *International Journal of Food Science & Technology* that the treatment "reduced the intensity" of the taint. Experts tried a host of other techniques, including irradiation of wine with ultraviolet light and mixing in absorbent clay or activated charcoal, but none had more than a "limited effect" on red wine and all had no effect on white wine.

Since these insects love aphids, it was thought that they would offer gardeners and commercial growers an alternative to synthetic pesticides. However, among wine makers, the Asian member of the ladybug family, that is now rapidly spreading throughout the United States, has acquired quite a different reputation. They are now labeled as disgusting stink bugs. 🐞

Ref. *Science News On Line*, 5/5/07

may last until 5:00 P.M. Bring close-focusing binoculars -- a few extra binoculars are available but to use them call ahead. The trip leader is Mike Reese. Meet at Rotary Gardens at 11:00 A.M. From Madison, take I-90 south to exit 175A in Janesville (E. Racine St.)

and then turn left at Palmer Drive. Go past the golf course turning right on Sharon Rd., just before a small restored prairie. Meet in the parking lot on the other side of the prairie. If you have any questions about this trip call Mike at (920) 787-2341. 🐞

About 25 people attended our 2007 Spring Meeting, held from Noon-5PM on Sunday, April 1, in our usual meeting place in Russell Lab on the UW-Madison campus. Six speakers each presented for about 30 minutes, and we enjoyed ample time to mingle, play and conspire with one another before, after, and in the breaks taken between presentations. Refreshments vanished over the course of the day—many thanks to those who were able to bring something to share. We had vegetables, fruit, cheese, meat, crackers, cookies and cake, with drinks to wash it down.

Our first speaker was Dan Young, who talked about the Pyrochroidae in Wisconsin, with special emphasis on their larvae. There is a whole world there, under the bark of dead trees. Michael Draney followed with a talk on research and outreach relating to spiders, and the joys of collaboration in his research. After a break, we reconvened to hear Tom Klubertanz share what he has learned about mayflies, in Nebraska and in Wisconsin, where most of his mayfly research has been done. Then Emily Mueller presented on insects she has dealt with in her recent MS program (studying soybean insects and diseases) and her current PhD program (studying snapbean insects and diseases). She also took us on a travelog to Guatemala so that we'd better understand where our food comes from and how it is produced. Wouldn't you know? Insects can be pests there too, and a puzzling array of pesticides are applied, often rather inexpertly. We then took another break to mingle and snack. Mike Reese then showed us the fruits of his study of tiger beetles in Wisconsin—such fabulous pictures of these fast and wary beetles, with range maps and habitat information. Mike said his next frontier would likely be Asilidae—more fast predators. Last to speak was Kerry Katovich, who told us about Heteroceridae, “variegated mud loving beetles”, about which, I suspect, none of us knew much of anything initially. We were fascinated by Kerry's presentation of this complex, interesting group, which even exhibits maternal defense of eggs. It's dirty work, this research, but Kerry simply has to do it anyway.

WES Spring Meeting Report

Submitted by
President Andrew Williams

Several people brought insect specimens to show, including a drawer of truly fantastic Cerambycidae brought by Herb Grimek. We even had a couple live animals. Michael Draney brought a huge, shiny green carabid that had been inadvertently shipped north to Wisconsin, recently, in something from Texas. I myself showed off and boasted of a live wasp, newly emerged in time for our meeting from an ichneumonoid ultimate host inside a pupa of *Cycnia tenera*, the initial host. *Perylampus* is likely a tangled group of species. They are hyperparasitoids of tachinids and ichneumonoids that are, themselves, parasitoids of Lepidoptera. In the course of my milkweed fauna project, I've reared *Perylampus* from initial hosts *Cycnia inopinatus*, *Euchaetes egle* and *Danaus plexippus*, but this is the first time I have reared one from *C. tenera* in ten years of rearing effort. These small, chunky wasps are rather sedate and are shiny, emerald green.

Even though Anita Carpenter was unable to join us, we did get to enjoy some insect art. Anita has shown her lovely insect quilts at two recent meetings. Kerry Katovich wore his wedding band, on which is a sculpted *Macroductylus* beetle. His wife, Nadine Kriska, also studies scarabs and her ring is absolutely wonderful: it has two sculpted dung beetles, together rolling a ball of lapis lazuli between them. I hope I can arrange for us to see Nadine's ring at our next meeting, and to hear her tell us of her trip to Africa, where the dung beetles are really big and wonderfully diverse.

As President of WES, I am eager to thank the six speakers for their work and sacrifice creating and delivering these inspiring and entertaining presentations. I thank, too, the eager audience, which included

people who had come all the way from Brown, LaCrosse, Winnebago, Sauk, Rock, Jefferson, Ozaukee and Waushara Counties. What was clear to me was that the speakers and the people in the audience thrill to study what interests them. We closed the meeting with a round of applause, acknowledging the courage and dedication of all those present who pursue their own particular interests and in celebration of CURIOSITY, itself. Everyone seemed pleased and fired up to engage this next field season. Let's reconvene in Fall and share stories of what we've seen, heard and done. 🌿

False Prophets in Sheep's Clothing!

No matter if it's the insect, plant or human world, predators often seek to disguise themselves as harmless to their victims. This is an effective scheme, often leaving victims unaware of danger until they are devoured by it.

Ants shepherd and protect some species of aphids that produce a savory nectar. Shepherd ants are selected from the ant colony to herd the colony's tiny “milk cows” to good feeding areas. The slow-moving aphids are easy to herd. Any insect that approaches too close to the herd is warned away. Since aphids are considered a good meal by many insects, the shepherd ants are especially aggressive in protecting them against recognized predators.

The larvae of the Green Lacewing especially enjoy a good meal of aphids. The larvae actually disguise themselves to infiltrate aphid herds. They cover themselves with the same wax fibers that are produced by the aphids. Once the larvae look like aphids they sneak into the herd unnoticed and are able to feed without gaining the attention of the shepherd ants. 🌿

Ref: Natalie Angier. 1984. Thomas Eisner: The Bug Man of Ithaca. Discover, Feb. p. 49-58.

How have Monarchs been faring in Wisconsin? How does this compare to other areas? Our state is fortunate to have relatively many 4th of July butterfly counts (given our size and population). Four counts have been held every year back to 1990 (several but not all held in previous years too). Another four Wisconsin counts were held each year back at least to 1993.

Only counts ever reporting a

MONARCH UPS AND DOWNS

by Ann B. Swengel



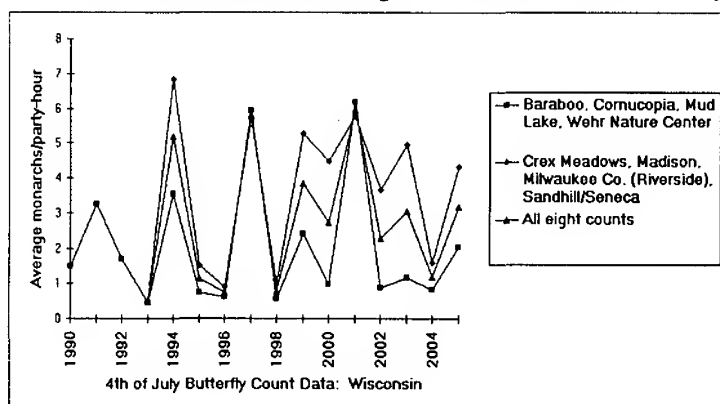
(e.g., during fall migration) from the same region. It would be great to have such a comparison for Wisconsin counts. In my comparison

here, the correspondence between the two groups of Wisconsin counts was amazing. While the magnitude of ups and downs varied between the

and these can vary a lot among regions and among years. Perhaps it's more surprising that there are patterns lurking in the jumble. Counts in Wisconsin, Ohio, and the Northeast actually agree on whether it's an up or down year most of the time. Climatic perturbations such as drought can extend over large areas, and the Monarch's migratory behavior could also contribute to spreading similar patterns of abundance widely throughout the landscape. Not too surprisingly, California counts did not show much similarity to the other counts, which were much further east.

Wisconsin counts show the stablest trend. All the other groups of counts tend to have more of their higher values earlier in the graph and more of their lower values in the later years. The declines are mild except for the Northeast, where the decline is pronounced and significant (in a Spearman rank correlation). Just a few high enough years in the next decade would reverse this decline. But if the next 5-8 years continue like the last 5-8 years, that decline could strengthen into a significant long-term trend.

Are you very curious about what happened in the 2006 counts? As I put this together, the 2006 count report is being compiled for its publication in spring. But I can report that on our three counts in those graphs (Baraboo, Cornucopia, Crex Meadows), we averaged 5.6 Monarchs per party-hour, well above our usual average. Only two years had higher rates for these counts during 1992-2005.



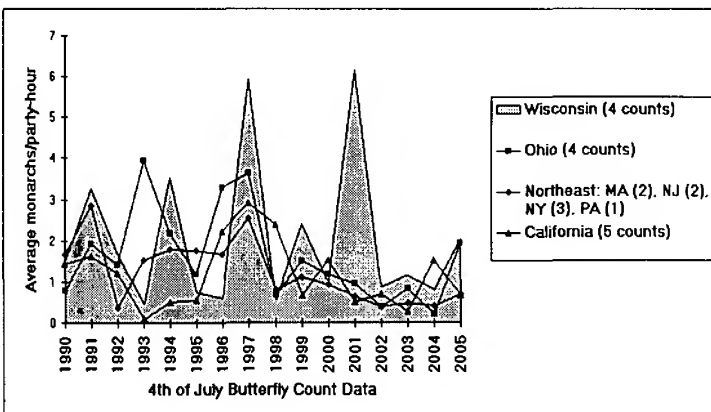
Monarch are analyzed, as including all counts would dilute patterns. But in Wisconsin it would be very hard to conduct a count for very many years and not produce any Monarch observations. Each Wisconsin count was held within a three-week span, except for unusually early dates for Mud Lake in 2000 and Milwaukee in 1993. Excluding those outlier dates (6 June 2000 and 11 June 1993), collectively the counts occurred between 27 June and 31 July.

These plots graph Monarch abundance as observation rates of individuals per party-hour per count. A party-hour is an hour spent observing by counter(s) working together as a party (group). This calculation makes results comparable among counts. These rates are then averaged for a group of counts each year, to even out the vagaries of local conditions on an individual count that may not reflect general patterns in the state.

How reliable are these results? Lincoln Brower and Dick Walton have published papers showing significant positive correlations of 4th of July butterfly count results with other surveys of Monarchs

two groups, they always agreed in whether they went up or down. This results in an extremely strong correlation statistically that is very significant (non-random): Spearman rank correlation = +0.96, out of a possible +1.0 for perfect positive correlation vs. 0.0 for complete non-correlation.

How do Monarchs in Wisconsin compare to other regions? I only found three sets of counts covering a reasonably small geographic area held each year since 1990, and with each count held within a four-week period. Our Wisconsin counts have the biggest ups and downs, but we also have the stablest trend. Otherwise, it looks somewhat jumbled among regions. This is expectable since butterfly abundance strongly relates to climatic patterns.



Cicadas are insects belonging to the Order Homoptera. They are among our larger insects, some being nearly 2 in. long. They are the loudest of insect singers and each of our species have distinctive songs that serve to identify them. There are about 155 cicada species in North America (north of Mexico).

There are two types of cicadas: Annual cicadas and periodical cicadas. Annual cicadas have a life cycle of two to eight years depending on the species. In any given year some adults emerge. In contrast, periodical cicadas have a lengthy synchronized development so that for many years there are no adults but when the full life span is reached the entire population emerges in the same year. Periodical cicadas (7 species) are confined to the eastern U.S. and they have an astonishingly long life cycle. Some have a 17 year cycle (and a more northern distribution) while others have a 13 year cycle (and a more southern distribution). *Magicicada septemdecim*, a Seventeen-year Cicada, occurs in a dozen large "broods" scattered around eastern North America. Each brood has the same 17-year cycle but each brood emerges in a different year. This summer in mid- to late-June, Brood 13 of the 17-year Cicada will emerge in southern Wisconsin and four surrounding states.

The cicada "nymph" spends its entire life underground feeding on plant juices from the roots of trees and shrubs. They live several inches to a few feet below ground. After 17 years, when the larval development is completed, the nymph digs a tunnel to the surface a few weeks before emergence. Finally, when the

The 17-year Cicadas Are Coming!

by Karl Legler



17-Year Cicada
(*Magicicada septemdecim*)
Photo: Allen Chartier

emerges at about the same time, sometimes the same night. Because of their overwhelming numbers, the species can afford substantial loss to predators without impacting the cicada's population and reproduction.

After a few days of further maturation, the adults proceed to seek out a mate and lay eggs. They are popularly (but erroneously) called "17-year locusts". Unlike locusts (which are grasshoppers) adult cicadas feed only sparingly (on plant sap). Males vibrate "tymbals" on their abdomen to make a sound. They sing their loud song, usually from tree tops to attract females. The song may be described as "Pharaoh" where the "Phar" part is drawn out and the "raoh" drops to a lower pitch. They sing in choruses, alternating between flying and singing.

After mating, the females insert thousands of eggs into twigs and branches of trees. This is harmful to young trees but they can be protected by placing netting over the tree. Otherwise Cicadas are relatively harmless. The period of adults lasts for about four to six weeks. The adults live about a month. Two months after egg laying the eggs hatch and the 1st instar larva drop from trees, burrow into the ground and begin the next 17 years of root

soil temperature gets above 64 degrees, the nymph leaves the underground abode (after sunset) and climbs a vertical surface such as a tree trunk. It molts one last time and stands revealed as an adult cicada. The nymphal casing remains attached to the tree trunk.

The adult is striking with its black body, red eyes and orange legs and wing veins. Much of the population

feeding and development. See the cicada field trip description on page 3 in this issue. If you miss them this summer, don't worry, they will be back in another 17 years! 🌿

NEW BINOCULARS FOR MACRO-INSECT WATCHERS

Butterfly-, dragonfly- and insect-watchers now have a powerful new tool. We use close-focusing binoculars that are capable of focusing down as closely as 6 feet from the insect. This gives a life-size image with plenty of working distance so as not to disturb the subject. There are several such binoculars available.

But new binoculars from Pentax represent a real breakthrough in ultra-close-focusing design. Called "Papilio", they come in two models, 8.5X and 6.5X. They incorporate objective lenses that turn slightly inward as you focus more closely which allows the eyes to easily fuse the two images into a single (3 dimensional) image. This allows the binoculars to focus down to an amazing 19 inches! At that close range they are equivalent to holding a butterfly in the hand just 10" from the eye and then observing it with a 5X magnifying glass! When you observe at 5X life-size, you can inspect minute structural details quickly, in the field. We've used them for the past year and highly recommend them. They are compact, lightweight (10 oz.), suitable for eye-glass wearers, and relatively inexpensive at about \$130. (A convenient source of binoculars is the Middleton-based national mail-order firm of Eagle Optics at www.eagleoptics.com or stop into their retail store for a look-see!)

Submitted by Karl Legler

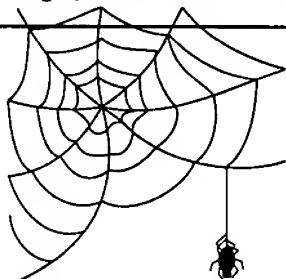


**NEW Book Announcement:
THE SONGS OF INSECTS
by Lang Elliott and
Wil Hersberger, 2007**

This is a 228-page generous sized (8.5" x 8.5") soft cover book with included sound CD. It is a "celebration of the chirps, trills, and scrapes of 77 common species of crickets, katydids, [a few] grasshoppers, and cicadas native to eastern and central North America. The photographs in this book will surprise and delight all who behold them." It is a shock to go from famine to such a luxurious feast! Nearly every page has huge gorgeous color photos, range maps and species information. Maps are reliable except for the cicada maps, which are inadequate for Wisconsin due to poverty of information. (If the range shown is near Wis the cicada occurs in Wis.)

57% of the species treated are in Wisconsin. And of Wisconsin's 54 species of singing insect 42 (78%) are included here. (Older adults will find that a few of these songs are too high pitched to be audible.) At \$19.95 this book and CD is a fantastic bargain, worth the price just for the most comprehensive treatment of our cicadas. (\$13.57 at www.amazon.com!).

Highly recommended. 🕷



In the 1960s, animal behavior researchers studied the effects of various substances on spiders. When spiders were fed flies that had been injected with caffeine, they spun very "nervous" webs. When spiders ate flies injected with LSD, they spun webs with wild, abstract patterns. Spiders that were given sedatives fell asleep before completing their webs.

— *The Wonderful World of Insects*

THE EMERALD ASH BORER in WISCONSIN

Wisconsin DNR Notice

<http://dnr.wi.gov/org/land/Forestry/FH/Ash/>

The Emerald Ash Borer (*Agrilus planipennis*) is an exotic insect, native to Asia, which currently threatens ash trees (*Fraxinus* spp.) in the Great Lakes region. Since its initial discovery in southeastern Michigan in 2002,

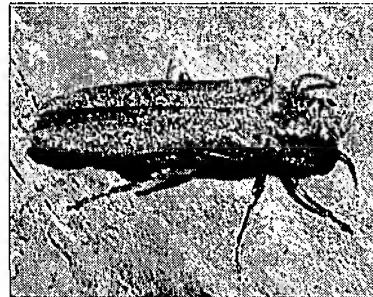
it has spread throughout Michigan's Lower Peninsula, into the Upper Peninsula and into nearby Ohio, Indiana and Ontario, Canada. Outlier infestations were also confirmed in the summer of 2006 in Kane and Cook counties in Illinois, and in Prince George County, Maryland. An estimated 20 million ash trees have been killed by Emerald Ash Borer in these infested areas.

Emerald Ash Borer is Spreading

Despite State and Federal quarantines and regulations on the movement of ash firewood, nursery stock and unprocessed logs, the distribution of Emerald Ash Borer is increasing. The insect's natural dispersal rate is just one-half to two miles annually; however, its transmission has accelerated due to the inadvertent transportation by people of Emerald Ash Borer larvae in infested materials. Scientists believe the Emerald Ash Borer was present in southeastern Michigan at least ten years before its discovery. Therefore, there is a strong possibility that Emerald Ash Borer is already residing in Wisconsin or will soon be arriving.

Emerald Ash Borer's Effects

The Emerald Ash Borer belongs to a group of insects known as metallic wood-boring beetles



Emerald Ash Borer Beetle
(*Agrilus planipennis*)
(bright metallic green beetle
just under 1/2 in. long.)

(Buprestidae). The beetle's immature or larval form spends its life feeding beneath the bark of ash trees. As a result, the ash tree host suffers extensive damage to its vascular system, depriving the tree's crown of water and nutrients. Research conducted by

Michigan State University and the USDA Forest Service has shown the Emerald Ash Borer attacks both stressed and healthy ash trees, typically killing its host in one to three years. All ash species are attacked, including white, green and black ash. Mountain ash (*Sorbus* spp.), not a *Fraxinus* species, is not attacked.

We Need Your Help

Forest inventory and analysis data shows that Wisconsin's forests include approximately 717 million ash trees. As a component of our northern hardwood, oak-hickory and bottomland hardwood forests, ash trees are a valuable Wisconsin resource. In addition, an estimated 5.1 million ash trees are planted throughout the urban landscape. The potential destruction that Emerald Ash Borer could bring to Wisconsin is unfathomable. As of August 2006, the emerald ash borer has not been found in our state, but it may already be here. Early detection, isolation and eradication are our best defenses against the emerald ash borer. We need your help in looking for this pest!

Initial Damage

Initial damage to Ash trees appears as thinning and dieback in the upper canopy of the tree as larvae feed under the bark they damage the conductive tissue. 🕷

Answers to February 2007 Mystery Insect

GENE DRECKTRAH

Oshkosh, Wisconsin, 2/7/07

The Mystery Insect is a soldier beetle (Coleoptera: Cantharidae) of the genus *Chauliognathus*, probably *C. pennsylvanicus*, a common species found on goldenrod in the state

GERTRUDE ZOELLER

Sussex, Wisconsin, 2/7/07

Goldenrod Soldier Beetle (*Chauliognathus pennsylvanicus*) one of the most common species of soldier beetles in the Midwest. They are abundant in my garden from late Summer to early Fall. They feed on pollen and nectar of flowers and small insects such as caterpillars, eggs and aphids. They do not bite nor sting. Adult females lay their eggs in clusters in the soil. The dark-colored, long, slender, wormlike larvae are covered with tiny dense bristles, given a velvety appearance. They spend their time in the soil, where they are predators of other insects, eating grasshopper eggs, small caterpillars and other soft-bodied insects.

KATHRYN KIRK

Madison, Wisconsin, 2/8/07

Cantharidae: *Chauliognathus pennsylvanicus*.

RON HUBER

Bloomington, Minnesota, 2/8/07

Just received the latest Newsletter. Thank you for the warm tribute to Arlene Kaufman! I wish that more people would remember their mentors so kindly. I just turned 70 in December, so as you can imagine, most of MY mentors are gone, but not forgotten. The wonderful memories are still holding tightly.

Your Mystery Insect appears to be the Goldenrod Soldier Beetle (*Chauliognathus pennsylvanicus*) (Family Cantharidae). It is apparently the most common and most widespread of the 18 species in the genus. It might be worth noting that *eating other insects*, reportedly occurs only in the larval stages. The adults feed on pollen and nectar. Sometimes this species is



Pennsylvania Leatherwing Beetle
(*Chauliognathus pennsylvanicus*)

Photo: Janice Stiefel

dramatically abundant - I have seen as many as 20 individuals on a single goldenrod flower-head. Thanks for all that you do !

ROBERT DANA

Minneapolis, Minnesota, 2/9/07

At last, one I know! The Mystery Insect in the February 2007 issue is a cantharid beetle, *Chauliognathus cf. pennsylvanicus*. It was very common this past August on *Solidago rigida* inflorescences in southwestern Minnesota.

Many pleasures in this number of the newsletter, as is always the case. Mike Reese's excellent photos, for example. The description of the Bembix and the fly was worthy of Aesop, or maybe a Buster Keaton film!

TIM HITZMAN

Forestville, Wisconsin, 2/19/07

This is an insect that looks very much like a lightning bug, but it is a soldier beetle. This one looks like a Goldenrod Leatherwing, also known as a Pennsylvania Leatherwing (*Chauliognathus pennsylvanicus*). I really enjoy the Mystery Insect each month and it keeps me looking and learning. Thanks.

HERB GRIMEK

Madison, Wisconsin, 2/19/07

The Mystery Insect in the February 2007 newsletter probably is the common soldier beetle, *Chauliognathus pennsylvanicus*. It may be my imagination, but they did not seem to be as abundant as usual in western Wisconsin in the last few years. 🌻

POLLINATORS, from Page 1

was specifically for wildlife habitat that could be tailored to provide greatest benefit for pollinators.

Importance of Protecting Native Pollinators

Pollinators are essential to our environment. The ecological service they provide is important for the reproduction of nearly 75 percent of the world's flowering plants. This includes more than two-thirds of the world's crop species, and one in three mouthfuls of all the food we eat. The United States alone grows more than one hundred crops that either need or benefit from pollinators.

Beyond agriculture, native pollinators are keystone species in most terrestrial ecosystems. Fruits and seeds derived from insect pollination are a major part of the diet of approximately 25 percent of birds, and of mammals ranging from Deer Mice to Grizzly Bears.

Why are native bees so helpful? Collectively, native bees are more versatile than Honey Bees. Some species, such as Mason Bees, are active when conditions are too cold or wet for Honey Bees. Many species also are simply more efficient at moving pollen between flowers. Bumble Bees and several other native species can buzz-pollinate flowers—vibrating the flower to release pollen from deep inside the anther—which honey bees cannot do. Crops such as tomatoes, cranberries, and blueberries produce larger, more abundant fruit when buzz-pollinated. 🌻

Editor's Note: There are many gloom and doom opinions on this subject, the most serious pointing blame at Monsanto and GM products.

Organic Consumers stated in their report of 5/17/07, "A crucial element in this CCD story (missing from reports in the mainstream media) is the fact that organic beekeepers across N. A. are NOT experiencing colony collapses." The millions of dying bees are hyper-bred varieties whose hives are regularly fumigated with toxic pesticides, with exposure to genetically modified organisms (GMOs).

Wisconsin Entomological Society



Janice Stiefel, Editor
2125 Grove Rd.
Bailey's Harbor, WI 54202

Address Servloes Requested

Wisconsin Entomological Society Newsletter — June 2007

Page 10



Toxic Butterflies

As most of us know, the Monarch larva feeds on Milkweed plants. These plants manufacture a powerful toxin that can, in most cases, stop the heart of any creature who eats enough of it. However, the Monarch larva is unharmed by this poison. In fact, the caterpillar stores the poison in its body and the poison remains even after the caterpillar has turned into a butterfly. Scientists thought that the Viceroy evolved to mimic or look like the Monarch to fool birds into thinking that it, too, was toxic.

The story was that Viceroy's must really be good to eat, since they evolved from the tasty Admiral Butterflies. This thinking remained untested until a few years ago, basically because scientists often consider it improper to question evolutionary claims. However, tests using the wingless bodies of six

different kinds of butterflies, including Viceroy's, proved that Viceroy's are indeed toxic to birds. Birds avoid the Viceroy because it manufactures its own toxins. In fact, research has shown that the Viceroy is, on the average, even more poisonous than the Monarch! In this example we see how this thinking has led to generations of misunderstanding about the Viceroy Butterfly.

References: Walker, Tim
Butterflies and Bad Taste
Science News, Vol. 139. P. 348.

A Monarch poem from the 1800s

by C. V. Riley
Lazily flying

Over the flower-decked prairies, West;
Basking in sunshine till daylight is dying,
And resting at night on Asclepias' breast;
Joyously dancing, merrily prancing,
Chasing his lady love high in the air,
Flutterin gaily, frolicking daily,
Free from anxiety, sorrow, and care!

Submitted by Andrew Williams

Wisconsin Entomological Society Officers



President: Andrew Williams

Dept. Of Entomology, UW-Madison
1630 Linden Dr.
Madison, WI 53707
awilliam@facstaff.wisc.edu

Vice President: Phil Pellitteri

Dept. of Entomology
1630 Linden Dr.
Madison, WI 53706
pellitteri@entomology.wisc.edu

Secretary-Treasurer: Les Ferge

7119 Hubbard Ave.
Middleton, WI 53562-3231
ferge@netzero.net

Newsletter Editor:

Janice Stiefel

2125 Grove Rd.
Bailey's Harbor, WI 54202
(920) 839-9796
jstiefel@tcl.com